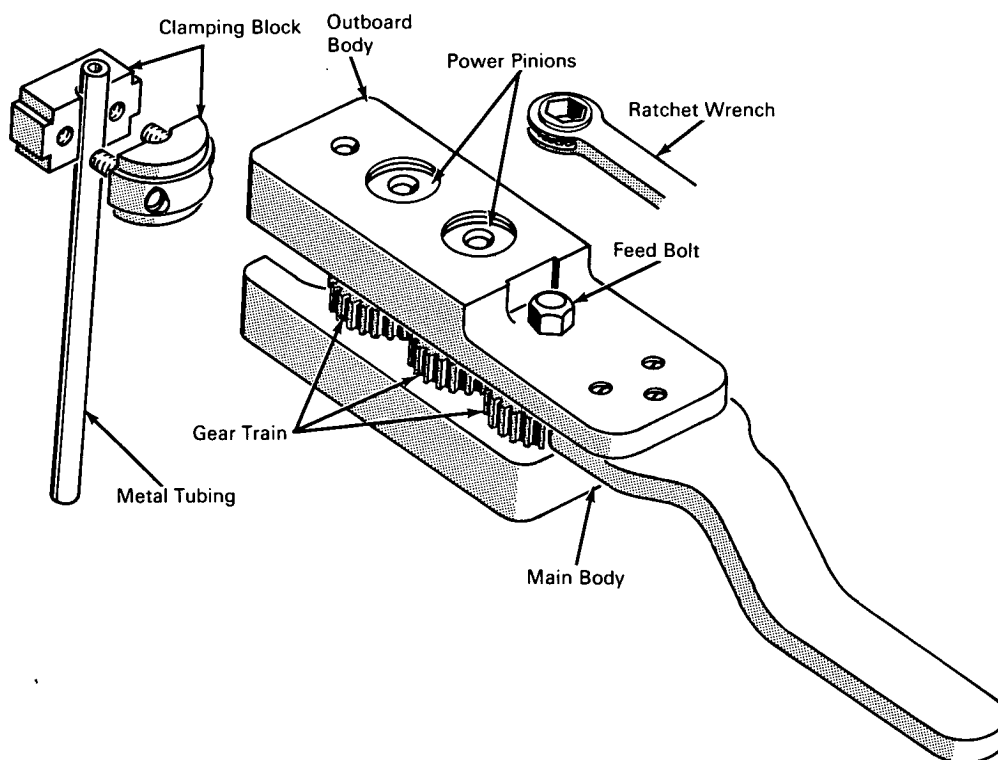


## NASA TECH BRIEF



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## Hand Tool Permits Shrink Sizing of Assembled Tubing



### The problem:

To size tubing ends while in their installed positions. Sizing tools normally require disassembly of the tubing installations for clamping in a bench mounted device.

### The solution:

A portable shrink sizing tool that clamps to the tubing and is operated by a ratchet wrench. A gear train forces the tubing end against an appropriate die or mandrel to effect the sizing.

### How it's done:

The clamping block is secured to the tubing so that the main body, with threaded power pinions extended, positions a shrink sizing die in the outboard body just beyond the tubing end. Rotating the feed bolt causes the gear train to turn the power pinions and draw the main body and outboard body together, as the power pinions have opposite (left-hand and right-hand) threads on each end. After this operation, the die is replaced with an expansion mandrel and the

(continued overleaf)

process is repeated to work the tube inside diameter to the proper size.

**Notes:**

1. This tool should be useful in hydraulic, refrigeration, and process control installation work.
2. Inquiries concerning this innovation may be directed to:

Technology Utilization Officer  
Manned Spacecraft Center  
Houston, Texas, 77058  
Reference: B66-10239

**Patent status:**

No patent action is contemplated by NASA.

Source: A. Millett and M. O'Dor  
of North American Aviation, Inc.  
under contract to  
Manned Spacecraft Center  
(MSC-504)